CLAIMS:

1. A plectrum for a string instrument having a plurality of conductive strings, said plectrum including:

a non-conductive body defining a gripping portion and a plucking portion; and

a conductive tip protruding just beyond an edge of said plucking portion, an outer surface of said tip being sized so as to fleetingly contact a string of said instrument when said string is plucked by said plucking portion, said tip further being capable of operative association with electronic monitoring circuitry adapted to provide a triggering signal each time the tip contacts any one of said strings.

2. A plectrum according to claim 1 wherein said tip is electrically connected to a first wire embedded within said body, said first wire being, in turn, electrically connected to a second wire external of said body and extending from a point on said body remote of said plucking portion.

3. A plectrum according to claim 1 or 2 wherein said tip protrudes from an outer edge of said plucking portion by no more than 1 mm.

4. A plectrum according to any one of the preceding claims wherein a perimeter length of said tip is no longer than 8 mm.

5. A plectrum according to any one of the preceding claims wherein a width of said tip is less than a width of said body.

6. A plectrum according to any one of the preceding claims wherein said body is generally a triangular shape, a region adjacent a first apex of said triangular shape defining said plucking portion, and a region adjacent the other two apexes defining said gripping portion, said tip being disposed at said first apex.

7. A plectrum according to claim 6 when depended from claim 2, wherein said second wire extends from, or adjacent to, one of said other apexes.

8. A plectrum according to any one of the preceding claims wherein an outer edge of said tip is shaped to generally correspond to a shape of said outer edge of said plucking region from which it extends.

9. A plectrum according to any of the preceding claims wherein said electronic monitoring circuitry is adapted to detect the initial contact between the tip and the string and to use said initial contact as the basis for the triggering signal.

10. A transmitter / receiver arrangement adapted for use with a plectrum as defined in any one of claims 1 to 9, said arrangement including a transmitter having a signal generator electrically connectable to said tip such that, when said tip fleetingly connects with said string during plucking, the transmitter produces a signal which is detectable by receiver circuitry, said receiver circuitry being operatively associated with said electronic monitoring circuitry so as to provide said triggering signal.

11. A transmitter / receiver arrangement according to claim 10 wherein said transmitter is mountable to a person playing the instrument, said transmitter being electrically connectable to said plectrum by said second wire.

12. A transmitter / receiver arrangement according to claim 11 wherein said transmitter is disposed upon, or housed within, a strap mountable to a wrist of said person.

13. A transmitter / receiver arrangement according to claim 12 wherein said strap includes means to house or mount a battery to power said radio frequency signal generator.

14. A transmitter / receiver arrangement according to any one of claims 10 to 13 wherein said string is electrically connected to an instrument-ground, which is, in turn, electrically connected to said receiver.

15. A transmitter / receiver arrangement according to any one of claims 10 to 14 wherein said signal generator is a radio frequency signal generator capable of producing a waveform at a carrier frequency, and said receiver circuitry is adapted to compare the carrier frequency with a local oscillator signal so as to only acknowledge a contact between the tip and the string once an intermediate frequency, which is a difference between the carrier frequency and the local oscillator frequency, is detected by the receiver, thereby reducing the likelihood of false triggering due to outside interference from radio frequency noise.

16. A transmitter / receiver arrangement according to claim 15 wherein both said carrier frequency and a frequency of said local oscillator signal are within the range 100 Khz to 30 MHz.

17. A transmitter / receiver arrangement according to claim 15 or 16 wherein said instrument-ground is electrically connected to a receiver-ground, said connection effectively forming an electrical short between said grounds at audio frequencies, and a first tuned receiver between said grounds which is broadly tuned at said carrier frequency.

18. A transmitter / receiver arrangement according to claim 16 wherein said connection is an inductor and a capacitor wired in parallel between the instrument-ground and the receiver-ground.

19. A transmitter / receiver arrangement according to claim 17 or 18 wherein, after passing through said connection, the radio frequency signal is amplified.

20. A transmitter / receiver arrangement according to any one of claims 17 to 19 wherein said receiver circuitry includes a selective band pass filter tuned at the intermediate frequency.

21. A transmitter / receiver arrangement according to claim 19 or 20 wherein said local oscillator signal is derived from a clock circuit of a microprocessor or from a frequency crystal.

22. A transmitter / receiver arrangement according to any one of claims 10 to 21 wherein said electronic monitoring circuitry includes a detector circuit adapted to output an envelope of the intermediate frequency component of the radio frequency signal, said envelope having brief pulses substantially corresponding to the period of time for which the plectrum tip is in contact with the string.

23. A transmitter / receiver arrangement according to claim 22 wherein said brief pulses are time-stretched so as to provide a modified signal having time-stretched pulses which would not be missed by a microprocessor.

24. A transmitter / receiver arrangement according to claim 23 wherein said electronic monitoring circuitry includes a microprocessor adapted to receive said modified signal and perform an analog-to-digital conversion thereto.

25. A transmitter / receiver arrangement according to claim 24 wherein said microprocessor is further adapted to detect positive transients in said modified signal and to generate said triggering signal by correlating each of said positive transients with an initial contact of the plectrum tip with the string.

26. A transmitter / receiver arrangement according to any one of claims 10 to 25 wherein said receiver circuitry is adapted to store and output a value corresponding to a maximum amplitude of an audio signal from said instrument each time the plectrum contacts the string.

27. A transmitter / receiver arrangement according to claim 26 wherein said electronic monitoring circuitry includes a microprocessor adapted to measure the stored value and to output a digital value corresponding to the amplitude.

28. A transmitter adapted for use with a plectrum as defined in any one of claims 1 to 9, said transmitter having a radio frequency signal generator electrically connectable to said tip such that, when said tip fleetingly connects with said string during plucking, the tip injects a radio frequency signal into the string.

29. A receiver adapted for use with the transmitter as defined in claim 28 including receiver circuitry being tuned to said radio frequency so as to detect the radio frequency signal injected into the string, the receiver being operatively associated with said electronic monitoring circuitry so as to provide said triggering signal.

30. A signal processing apparatus adapted to process an audio signal derived from a string instrument having a plurality of conductive strings being plucked by the plectrum defined in any one of claims 1 to 9, said apparatus including:

a first input to receive said audio signal;

a second input to receive a triggering signal which includes a plurality of triggering pulses, each indicative of a plucking of any of said strings by said plectrum tip;

signal processing circuitry adapted to perform a plurality of different processes, each process modifying the audio signal, said circuitry being electrically connected to said first and second inputs, and wherein said signal processing circuitry is adapted to vary the particular process used to modify the audio signal according to a predefined relationship with said triggering signal; and

an output electrically connected to said signal processing circuitry for outputting a modified audio signal.

31. A signal processing apparatus according to claim 30 wherein said predefined relationship is such that the process is varied each time an integral number of triggering pulses are received by the signal processing circuitry.

32. A signal processing apparatus according to claim 31 wherein said integral number is one.

33. A signal processing apparatus according to any one of claims 30 to 32 wherein, during a transition from a first process to a second process, the first process is progressively faded out and the second process is simultaneously progressively faded in.

34. A signal processing apparatus according to claim 33 wherein said transition commences upon receipt of a triggering pulse such that each transition is initiated substantially at each moment the tip first contacts the plectrum during plucking.

35. A signal processing apparatus according to any one of claims 30 to 34 wherein at least one of the operative characteristics of one or more of said processes is variable

dependent upon a maximum amplitude of the audio signal each time the plectrum contacts a string.

36. A signal processing apparatus according to any one of claims 30 to 35 wherein said plectrum communicates with said signal processing apparatus via the transmitter and/or receiver apparatus as defined in any one of claims 10 to 29.

37. A signal processing apparatus according to claim 36 when depended from claim 35 and wherein the transmitter / receiver arrangement is in accordance with claim 27, wherein the signal processing apparatus includes a third input to receive said digital value, said third input being adapted to feed said value to the signal processing circuitry.

38. A signal processing apparatus according to claim 37, wherein the second and third inputs comprise a single input which is adapted to receive and decode an information stream having information relating to both the triggering and the maximum amplitude.

39. A plectrum substantially as herein described with reference to any one embodiment as shown in the accompanying drawings.

40. A transmitter / receiver arrangement substantially as herein described with reference to any one embodiment as shown in the accompanying drawings.

41. A transmitter substantially as herein described with reference to any one embodiment as shown in the accompanying drawings.

42. A receiver substantially as herein described with reference to any one embodiment as shown in the accompanying drawings.

43. A signal processing apparatus substantially as herein described with reference to any one embodiment as shown in the accompanying drawings.